REMARKS

The Office Action mailed on October 9, 2007 has been carefully reviewed and considered. Reconsideration of the present application in view of the following remarks is respectfully requested. Claims 1-42 are currently pending. Claim 1 is amended. Claim 7 is amended to correct a typographical error. Claims 4-6 and 11 – 42, withdrawn from consideration, are canceled with this amendment.

Restriction Requirement

The Examiner has restricted the present invention into three species (or embodiments) based on four figures, Figure 2a, Figure 2b, Figure 9, and Figure 12.

In response to the restriction requirement, Applicants hereby provisionally elect Species 1 of the original, which reads upon pending claims 1 – 3 and 7 - 10, and traverse the restriction requirement.

Applicants hereby traverse the restriction requirement on the basis that the identification of species based upon figures unduly limits the scope of protection of any of the elected species. Should any of the current claims, or any claims added later in prosecution, be deemed by the Patent Office or a court to be read under 35 U.S.C. 112, paragraph 6, then those claims would be "construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." However, election of a species based on a figure or figures, where all other species are also identified by a figure or figures, has the effect of "removing" from the specification all figures not identified as being a part of the elected species. In the present case, under the current restriction requirement, if Applicants elected Species 1, which is based on Figure 2a, then the subject matter corresponding to Figures 2b, 9 and 12 would essentially be

deleted from the application, and thus unavailable as "corresponding structure, material, or acts". Thus, limiting the structure available for interpretation of the claims under 35 U.S.C. 112, paragraph 6.

Any allowed claim, interpreted under 35 U.S.C. 112, paragraph 6, after Applicants elected Species 1 under the current restriction requirement, would be limited to Figure 2a. Applicants may then be barred from obtaining similar protection on any of the other species in a divisional application under statutory double patenting (35 U.S.C. 101), despite the fact that the claim scope would be different due to the claims being interpreted using different figures.

Therefore, election of a species under the current restriction requirement may improperly limit Applicants rights. As such, Applicants respectfully submit that the restriction requirement is improper.

Additionally, the restriction requirement is improper because the species identified, and hence their corresponding claims, are not mutually exclusive. M.P.E.P. 806.04(f) states that "[w]here two or more species are claimed, a requirement for restriction to a single species may be proper if the species are mutually exclusive." Specifically, one or more of the figures utilized as a basis for the restriction requirement is/are not mutually exclusive from one or more of the other figures utilized as a basis for the restriction requirement. Thus, any claims chosen for the identified species would violate M.P.E.P 806.04(f).

Furthermore, the restriction requirement is improper because it is unclear why the limitations in the claims are considered to restrict the claims to a particular disclosed species. M.P.E.P. 814 requires that "the particular limitations in the claims and the reasons why such limitations are considered to restrict the claims to a particular disclosed species should be

maintained if necessary to make the requirement clear." Applicants respectfully maintain that the requirement is unclear because it is not clear how claims corresponding to the figures would be mutually exclusive. The Examiner has not made, for example, how claims directed towards Species 1 (described as Figure 2a) would be mutually exclusive from claims directed towards Species 2 (described as Figure 2b), as the claims directed toward Species 1 would also be directed toward Species 2.

Should the Examiner maintain the present restriction requirement, Applicants elect species 1 corresponding to Figure 2a.

The 35 U.S.C. § 112 Rejection

The Examiner has rejected claim due to the lack of antecedent basis for the limitation of "probability determination" and general lack of clarity.

In response, applicants have amended claim 1 to distinctly and clearly claim the subject matter which applicants regard as their invention and to provide antecedent basis for the claim limitations.

The 35 U.S.C. § 103 Rejection

Claims 1 - 3 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent Application Publication No. 2003/0174902 to Barkan (Barkan) in view of U.S. Patent Application Publication No. 2001/003980 to Newman et al. (Newman)

Applicants respectfully maintain that the combination of Barkan with Newman does not render the claimed invention unpatentable. Claim 1, for example, includes the following limitations.

A method of automatically determining a need to service a digital image acquisition system including a digital camera with a lens assembly, comprising:

(a) determining a probability that pixels within one or more acquired digital images correspond to blemish artifacts;

(b) analyzing pixels within one or more acquired digital images according to the probability determinations to determine whether a threshold distribution of blemish artifacts is present within one or more of said digital images; and

(c) indicating a need for service when at least said threshold distribution is determined to be present.

(Amended claim 1) (Emphasis added)

Applicants respectfully submit that Barkan does not disclose the limitation of determining a probability that pixels correspond to blemish artifacts. Rather Barkan discloses the consideration of a sensor's suitability for imaging. Barkan does not mention a determination of probability. As cited by the Examiner, Barkan discloses the following.

"Digital cameras and other image capture devices have pixel based sensors. In the case of a digital camera the sensor is part of the digital camera back, hereinafter referred to simply as the back. The sensor comes in two types, those that substantially cover the full image capture so that only a single image capture operation is needed per image, and those in which the image size is a fraction of the full image capture area, so that the sensor needs to be shifted for separate captures over the capture area. The former are referred to herein as large area sensors. In state-of-the-art digital cameras or cameras with digital camera backs having large area sensors, the most costly component is usually the image sensor. This is primarily because fabrication yield, that is the proportion of sensors manufactured that are passed for use, is approximately proportional to the area. Typically, for sensors larger than 16 mm.times.24 mm, less than half of the sensors manufactured are passed as suitable for imaging. Sensors that are considered as not being suitable for imaging are generally rejected because they have blemishes that cannot be corrected using conventional means. Blemishes are regions of one or more unreliable pixels. In general single pixel, or close to single pixel, blemishes can be compensated for using conventional means. However, certain larger types of blemish such as clusters of more than 2.times.2 unreliable pixels, or adjacent multi-row or multi-column blemishes cannot be compensated for using conventional means and sensors having such blemishes are typically rejected."

(Barkan, para. 2) (Emphasis added)

It is clear that Barkan is referring to known "unreliable" pixels and that a given amount of such pixels renders the sensor unsuitable for imaging. Barkan further states that such sensors are

"rejected". Barkan does not disclose a determination of a probability that pixels correspond to blemish artifacts.

The Examiner relies on paragraphs 11 – 14 of Barkan and the term "blemish test" for disclosing such a limitation. A thorough reading of this portion of Barkan makes clear that the claimed limitation is not disclosed. Barkan discloses the following.

"Preferably, said sensor is substantially quadrilateral and said two separate axes are respective diagonals of said sensor.

The apparatus may further comprise a calibrator operable to calibrate said apparatus by determining said image detection positions such that a minimum of blemished pixels are superimposed over other blemished pixels for all of said image capture positions.

Preferably, said calibrator is operable to carry out a blemish test on said sensor to determine positions of blemished pixels.

Preferably, said blemish test comprises analysis of a test image of a uniformly illuminated area, captured by said sensor."

(Barkan, para. 11 – 14) (Emphasis added)

It is clear that the "blemish test" as disclosed in Barkan, determines positions of blemished pixels, which are defined by Barkan to be "unreliable pixels" (see above). There is no disclosure that this blemish test provides a determination of a probability that pixels correspond to blemish artifacts as claimed.

The Examiner next relies on paragraph 54 of Barkan as disclosing the limitation of determining whether a threshold distribution of blemish artifacts is present. A thorough reading of this portion of Barkan makes clear that the limitation is not disclosed. Barkan discloses the following.

"Reference is now made to FIG. 5, which is a simplified flow chart that shows the calibration stage 30 in greater detail. In the calibration stage 30 the blemishes are firstly mapped, in a stage 40. Mapping may be by visual means. Alternatively mapping may be carried out by analysis of a test image made using the sensor on a uniformly illuminated area. On the basis of the mapping, in a stage 42, a first shift direction and a distance is selected with the property that no points in the scene fall under a blemish in two shots if the second shot is shifted relative to the first, with the exception mentioned above in respect of co-incident row and column blemishes where certain row points from one image map onto column points of the other image. Blemish superimposition of this kind is preferably dealt with by calculating a third shift. Generally two or three shift positions are sufficient but four or more shift positions are contemplated for heavy blemish situations."

(Barkan, para. 54) (Emphasis added)

This portion of Barkan discloses a mapping of blemishes to allow determination of a distance and direction of shift that will ensure that no points in the scene fall under a blemish in two shots where the shots are shifted relative to one another. There is no mention of determining if a threshold distribution of blemish artifacts is present, or even of determining the amount of blemishes present.

Further, the Examiner has admitted that Barkan does not disclose the limitation of indicating a need for service. The Examiner is correct in this regard as Barkan is not concerned with in any way servicing the sensor. Rather, Barkan describes a method by which sensors which would be deemed unsuitable for imaging under conventional schemes may be used to effect suitable imaging. The Examiner then relies on Newman to provide this limitation. However, in this regard the Examiner's reliance is unfounded. Barkan, not only does not disclose servicing the sensor, but teaches away from any method or scheme involving servicing or repairing the sensor. The whole point of Barkan is a method to effect suitable imaging with a defective sensor. To add the concept of servicing the sensor is contrary to the teaching of Barkan and would obviate the inventive concept of Barkan. The references are, therefore, not permissibly combined in the manner suggested by the Examiner.

For these reasons, applicants respectfully submit that claim1, as amended, is not rendered obvious by the combination of Barkan and Newman. Given that claims 2 and 3 depend from

claim 1, applicants respectfully submit that claims 2 and 3 are, likewise, not rendered obvious by the combination of Barkan and Newman.

In regard to the further references cited by the Examiner, applicants respectfully submit that none of Webb, Anderson, or Rice, alone or in any combination one with another, remedy the defects of Barkan and Newman as discussed above.

For these reasons, applicants respectfully submit that claims 7 – 10 are not rendered obvious by any of the cited references, alone, or in combination one with another.

With this amendment it is respectfully submitted the claims satisfy the statutory requirements. In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Conclusion

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our **Deposit Account No. 50-4399**.

Respectfully submitted,

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